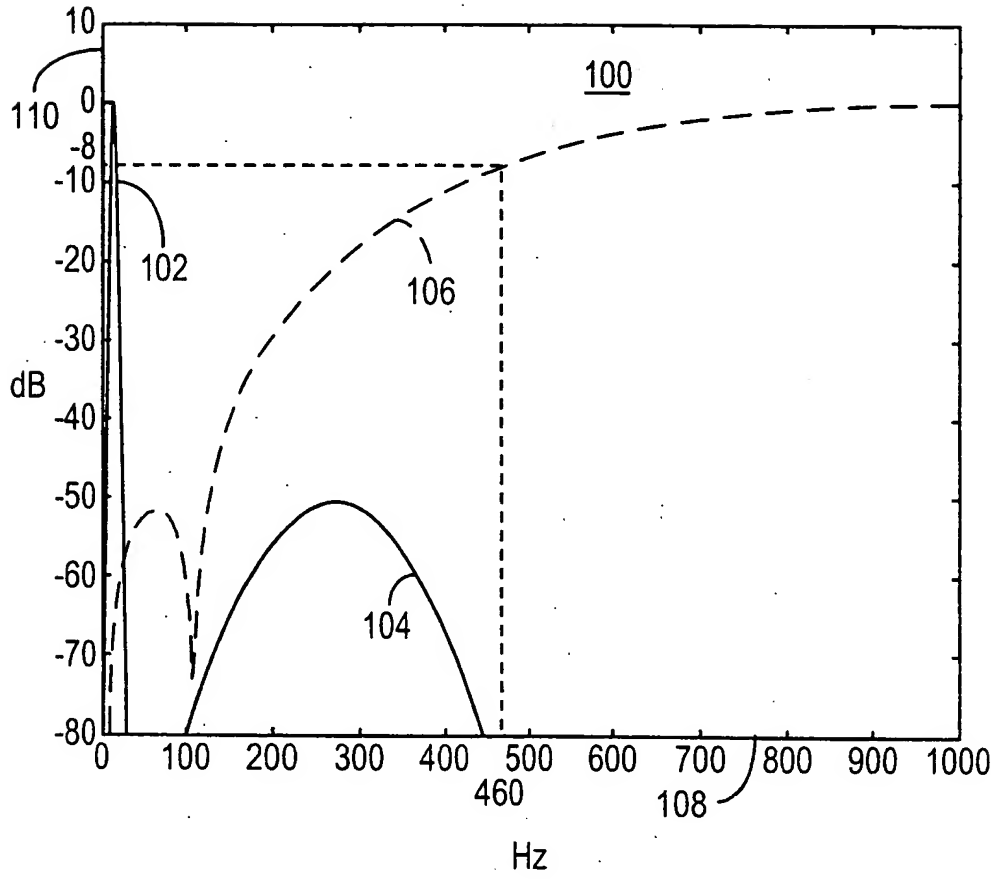

10
110
0
-8
-10
-20
-30
dB
-40
-50
-60
-70
-80
100
102
106
104
0
100
200
300
400
500
600
700
800
900
1000
460
108
Hz

FIG. 1

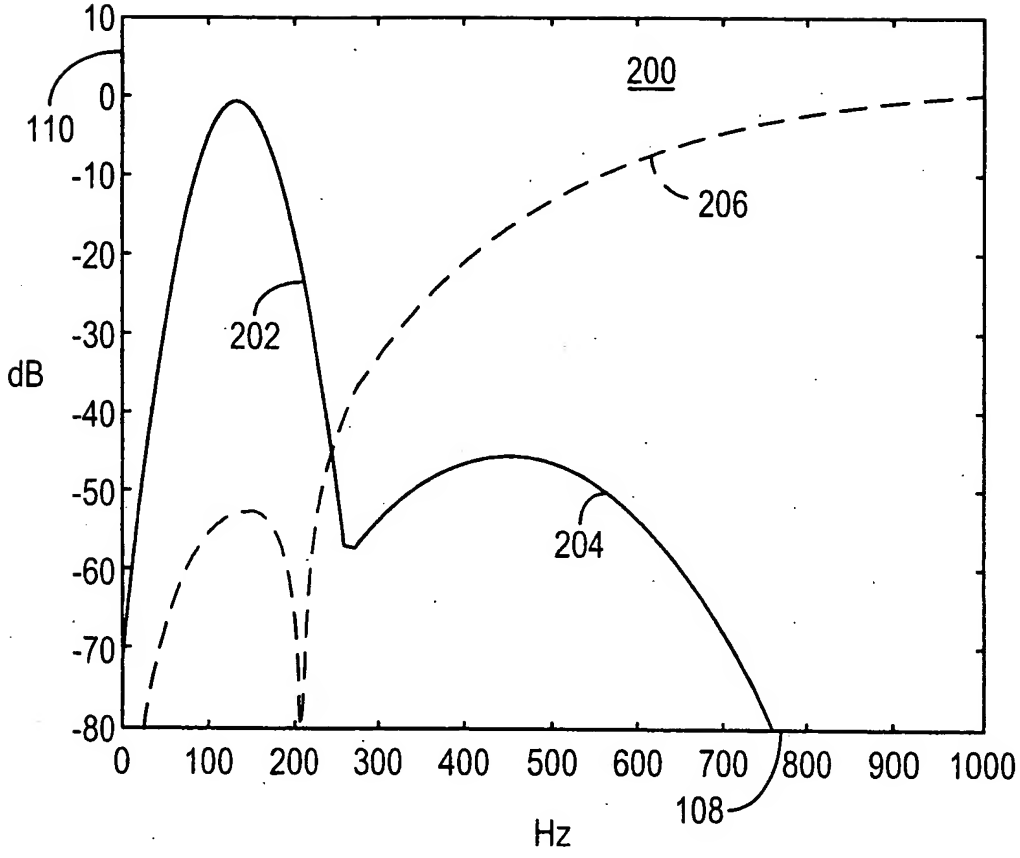

10
0
-10
-20
-30
-40
-50
-60
-70
-80
dB
110
200
206
202
204
0
100
200
300
400
500
600
700
800
900
1000
Hz
108

FIG. 2

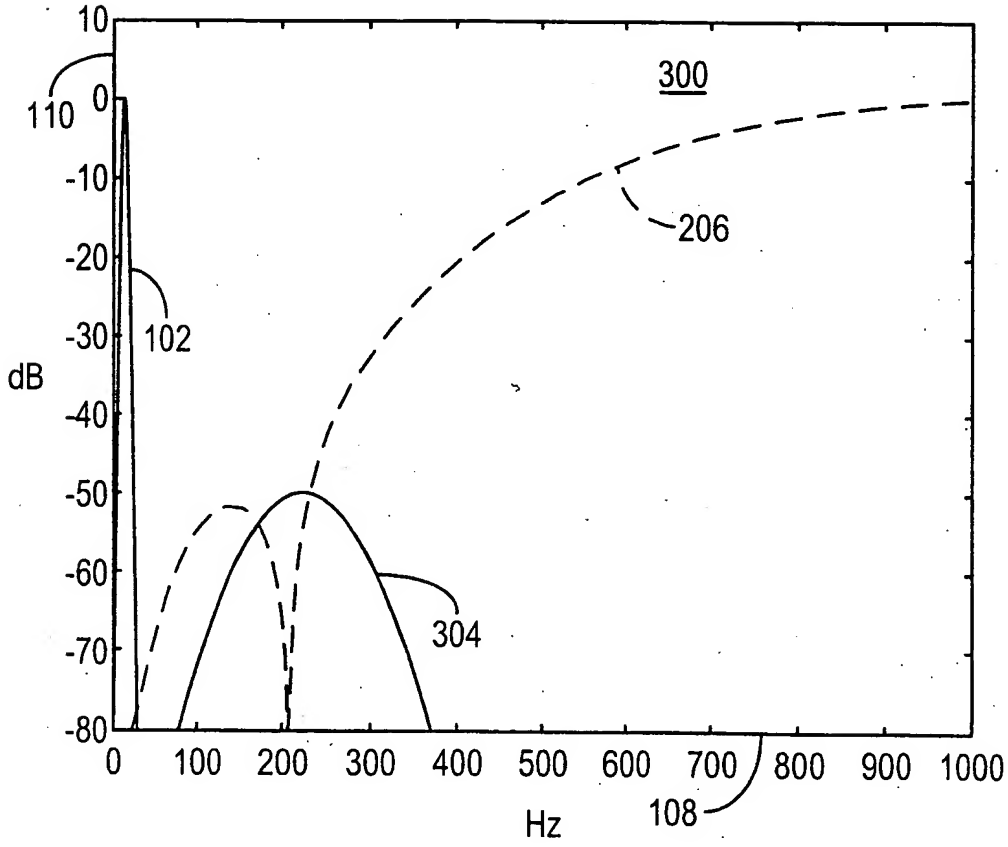

10
0
-10
-20
-30
-40
-50
-60
-70
-80
dB
110
300
206
102
304
0
100
200
300
400
500
600
700
800
900
1000
Hz
108

FIG. 3

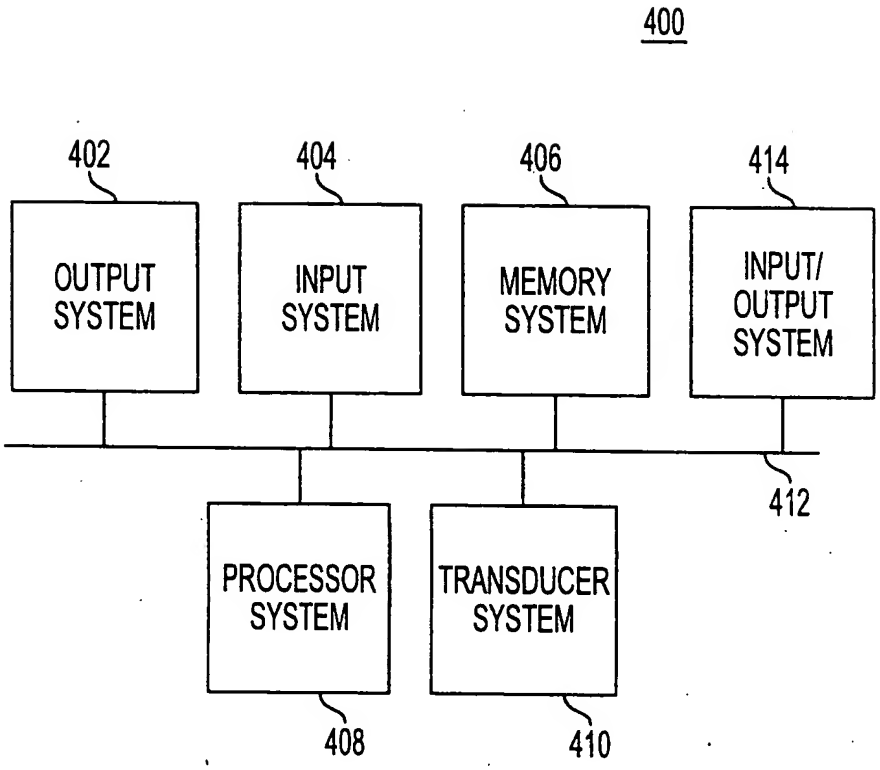

400
402
404
406
414
OUTPUT SYSTEM
INPUT SYSTEM
MEMORY SYSTEM
INPUT/ OUTPUT SYSTEM
412
PROCESSOR SYSTEM
TRANSDUCER SYSTEM
408
410

FIG. 4

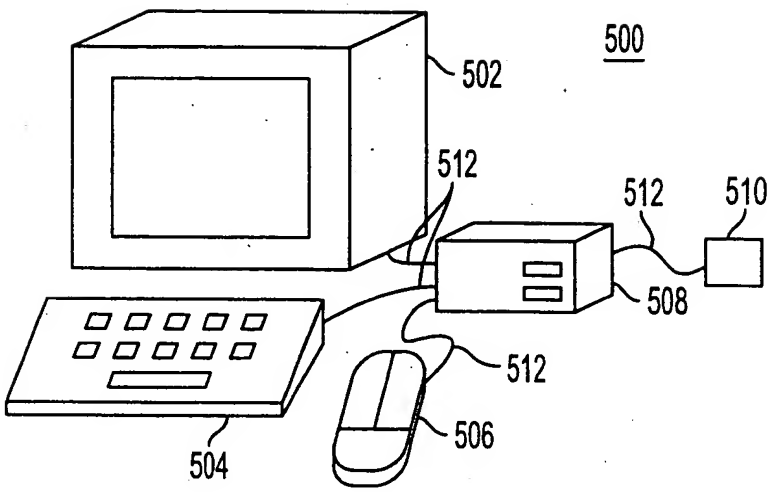


FIG. 5

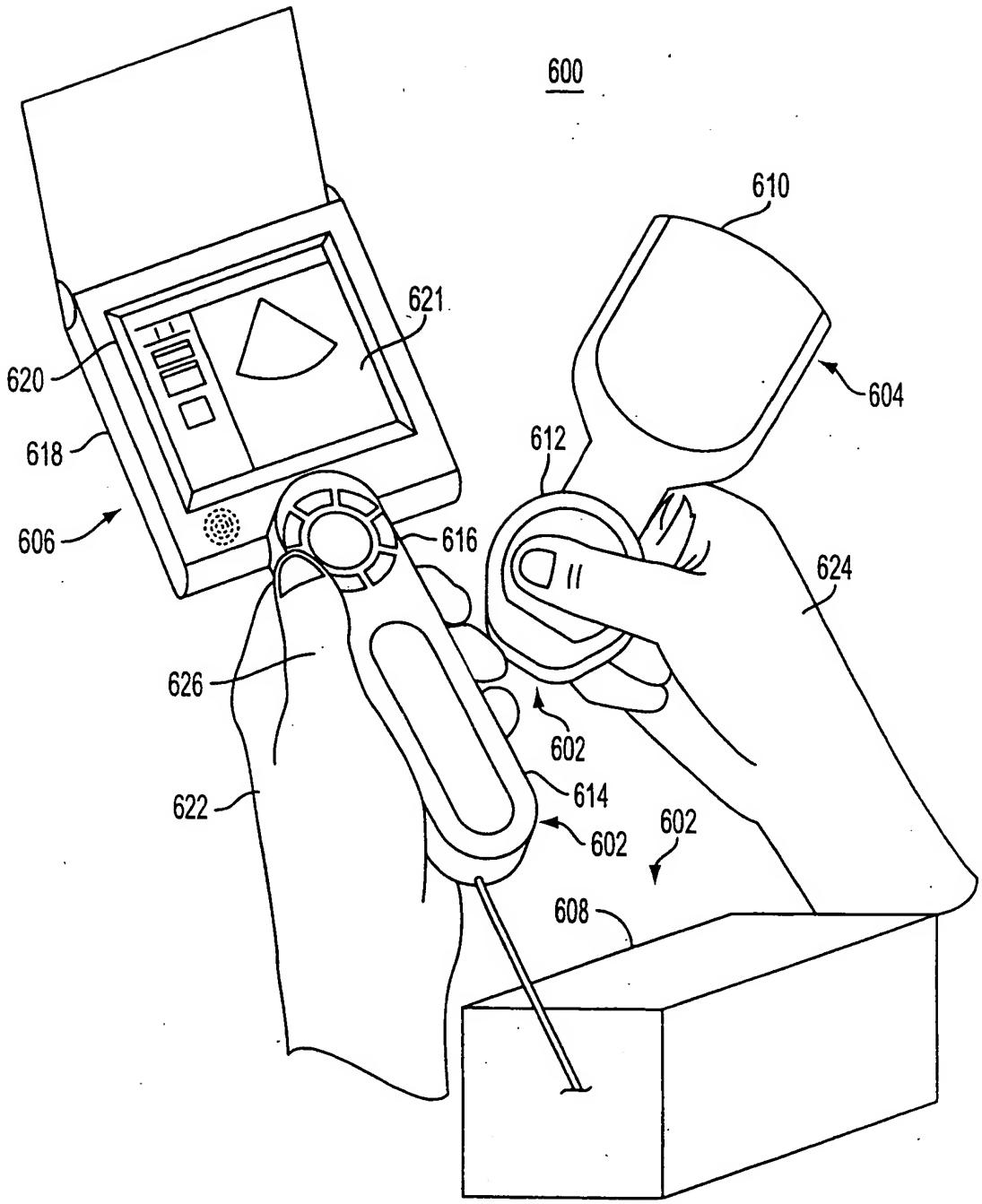

600
610
621
620
604
618
612
606
616
624
626
602
614
622
602
602
608

FIG. 6

FIG. 7A

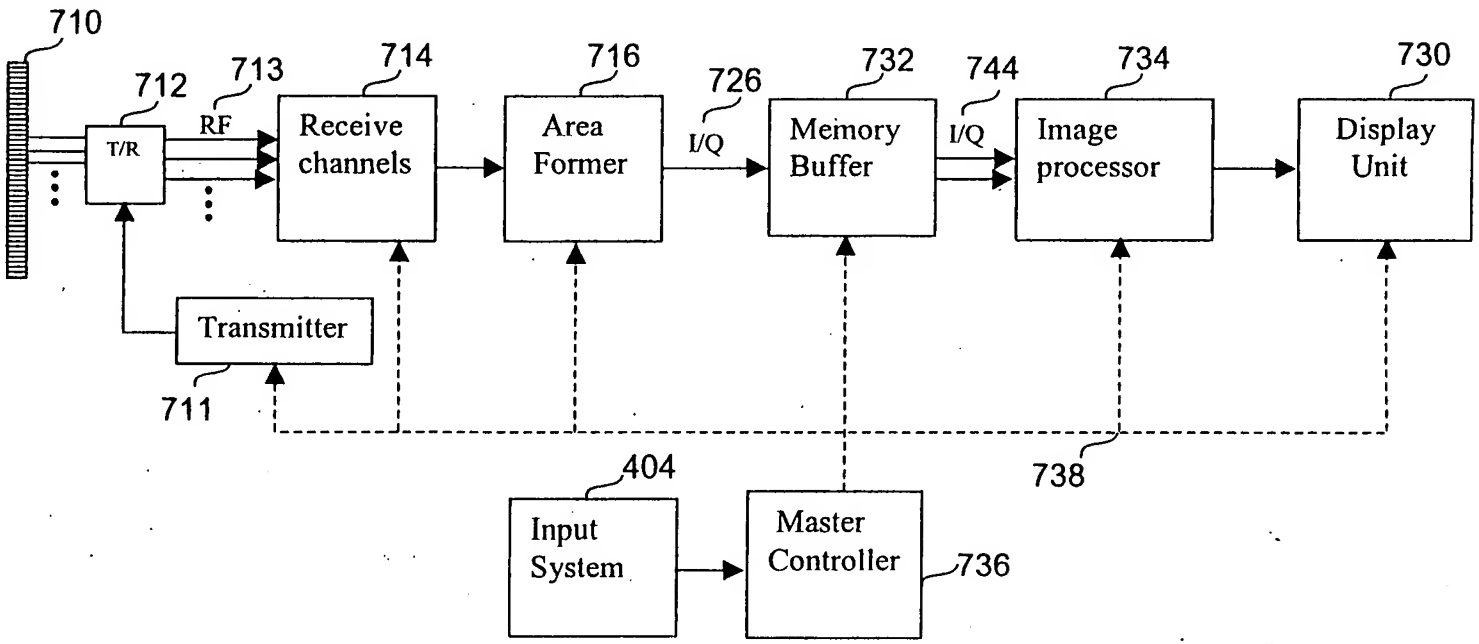

710
712
713
RF
T/R
714
Receive channels
716
Area Former
726
I/Q
732
Memory Buffer
744
I/Q
734
Image processor
730
Display Unit
Transmitter
711
738
404
Input System
Master Controller
736

FIG. 7B

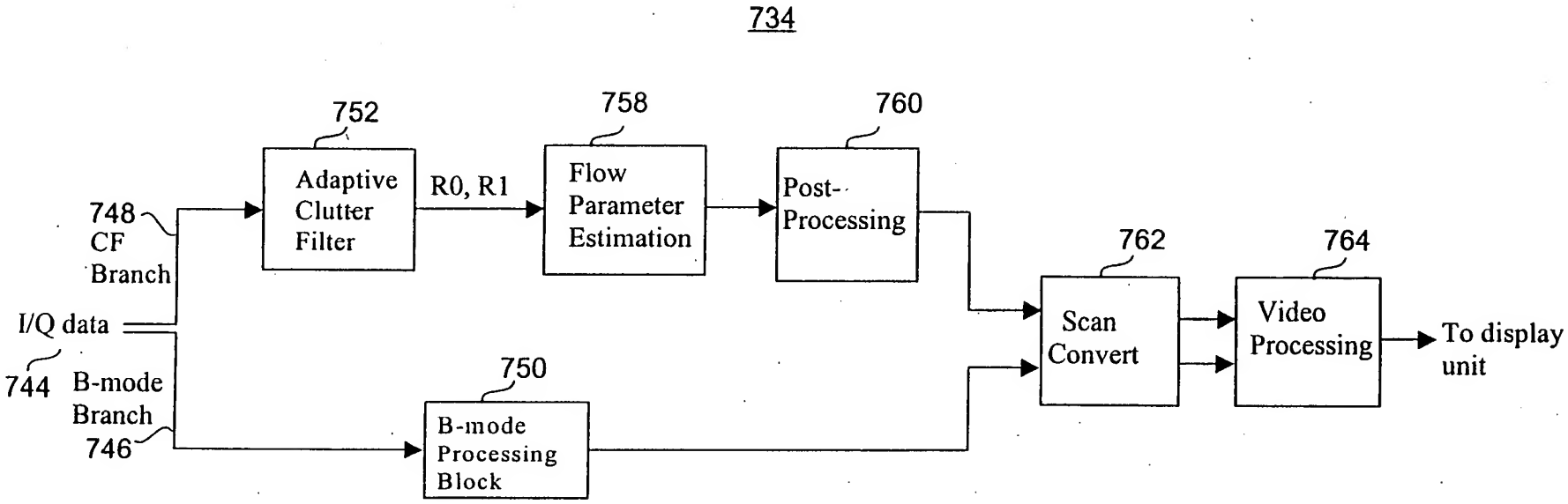

734
752
758
760
Adaptive Clutter Filter
R0, R1
Flow Parameter Estimation
Post-Processing
748
CF Branch
I/Q data
744
B-mode Branch
746
750
B-mode Processing Block
762
764
Scan Convert
Video Processing
To display unit

FIG. 8

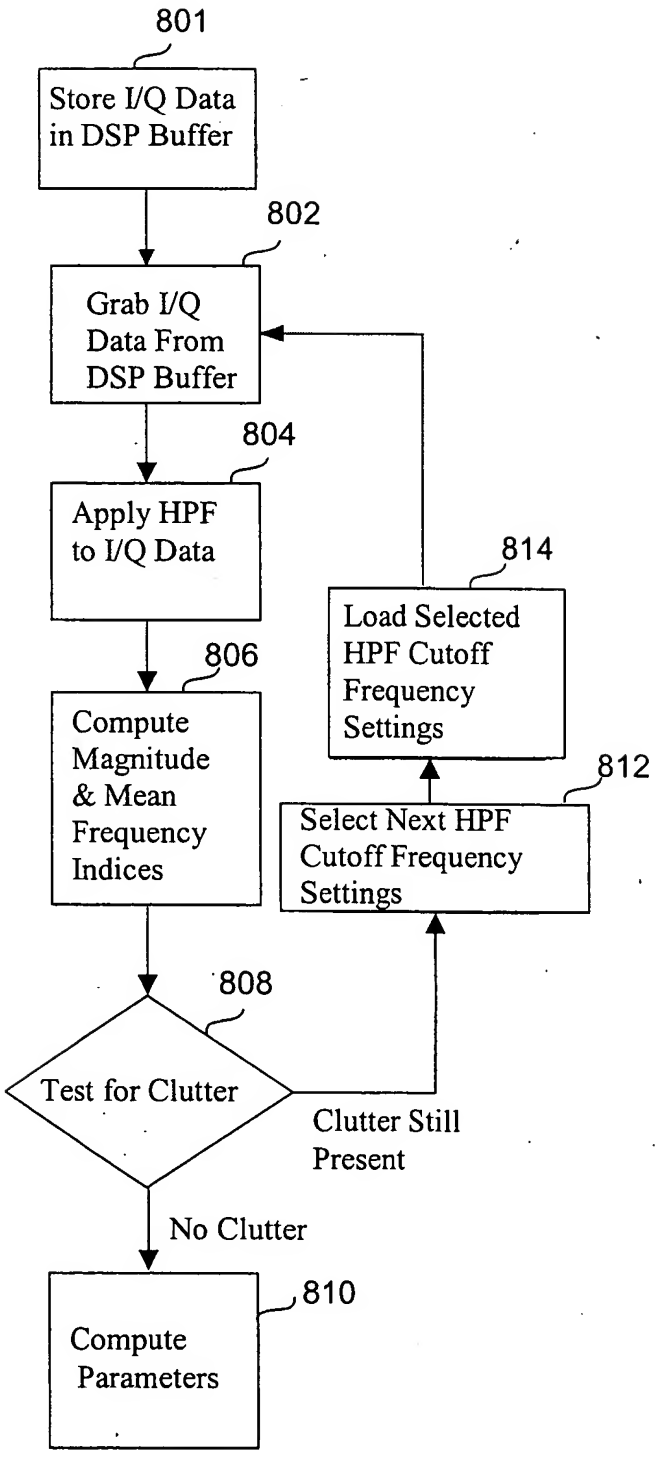
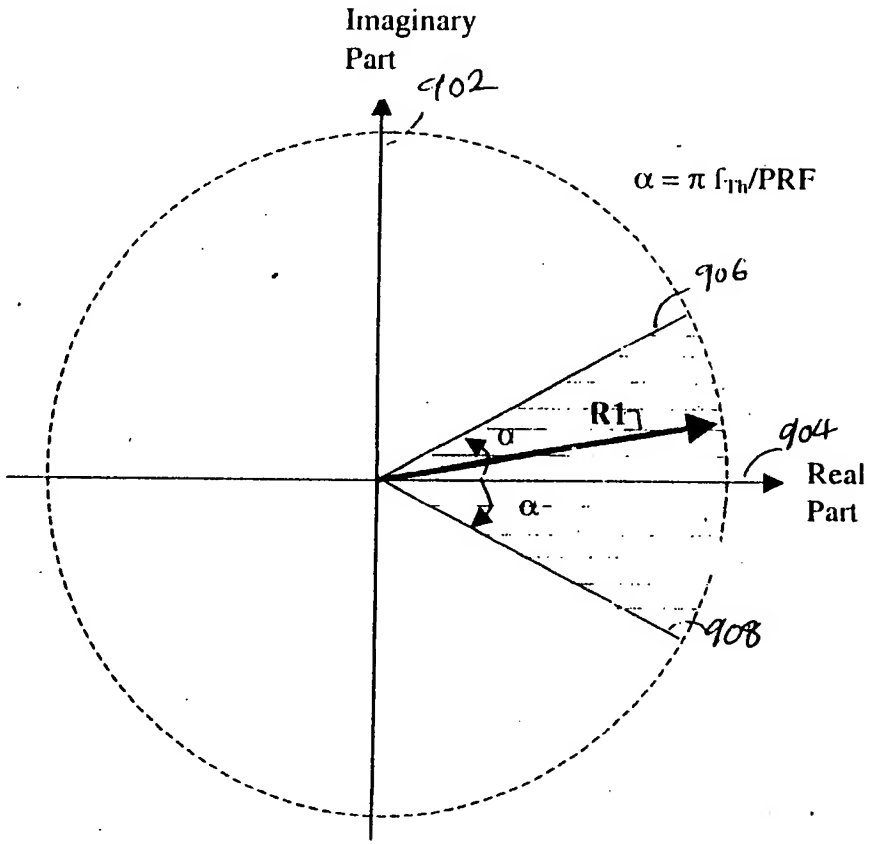

801
Store I/Q Data in DSP Buffer
802
Grab I/Q Data From DSP Buffer
804
Apply HPF to I/Q Data
806
Compute Magnitude & Mean Frequency Indices
808
Test for Clutter
Clutter Still Present
No Clutter
810
Compute Parameters
812
Select Next HPF Cutoff Frequency Settings
814
Load Selected HPF Cutoff Frequency Settings

FIG. 9


Imaginary
Part
902
$\alpha = \pi f_{Th}/PRF$
906
R1
α
904
Real
Part
α-
908